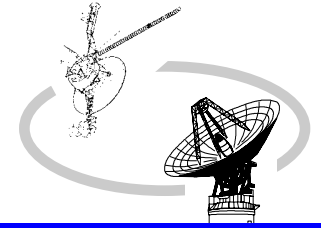




Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)

JPL

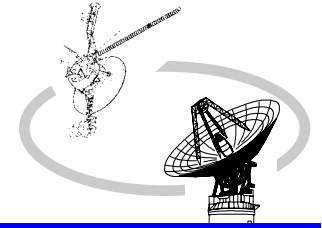
JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Resource Analysis Team

March 20, 2008

LaMont Fairley





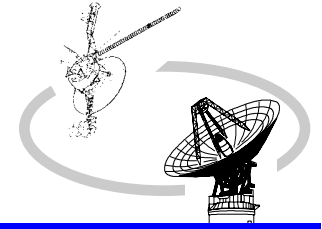
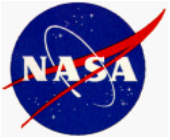
Resource Allocation Planning Service (RAPS)



MID-RANGE SCHEDULING STATUS

◆ RESOURCE NEGOTIATION STATUS

- 2008 WEEKS 12 - 21 (THRU 05/25/2008) HAVE BEEN RELEASED TO DSN SCHEDULING AS OF 03/12/2008.
 - 2008 WEEKS 31 - 32 (THRU 08/10/2008) WERE RELEASED TO THE REMOTE USERS ON 03/07/2008.
 - 2008 WEEKS 22 - 30 (THRU 07/27/2008) HAVE REMAINING FACILITY AND EQUIPMENT CONFLICTS.
- ◆ The Mid-Range Scheduling process has schedule 20 weeks ahead of real-time. Currently, there are 10 weeks of conflict-free schedules. Conflict Resolution is required for the following six weeks: 06/30/2008 through 08/10/2008.



Resource Allocation Planning Service (RAPS)



ON-GOING SPECIAL STUDIES/ACTIVITIES

- Ulysses Extended Mission Special Study was completed

Ulysses Special study determines the ability of the DSN to support Ulysses during the extended mission phase from April 2008 through September 2008

The study shows the DSN can provide greater than 95% of the requested hours of track time. There are no missions that place a significant threat to Ulysses during its extended mission ending in September 2008

- Voyager 1 and Voyager 2 Supportability Study was completed

Special study illustrates the supportability for the Voyager 1 and Voyager 2 mission extended requirements to the current mission requirements.

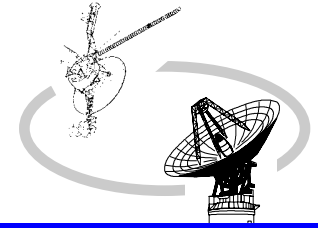
Forecast results for the Voyager 1 and Voyager 2 on both subnets (70-meter and 34-meter) combined indicate the DSN can support the extended requirements through 2013, slightly reducing supportability for others as contentions for DSN resources increase.

For details of the study, please refer to the RAP Website:

<http://rapweb.jpl.nasa.gov/studies.html>



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DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)

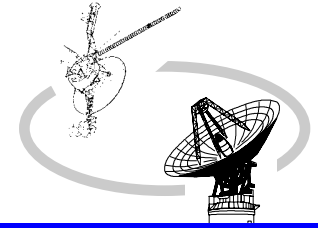


– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
DSN ZDD Calibration	DSN	--	--	--
Reference Frame Calibration (Cat M&E and Clock Sync)	DSN	10/01/01	09/30/20	12/31/30
Voyager 2	VGR2	08/20/77	10/15/89	12/31/13
Voyager 1	VGR1	09/05/77	12/31/80	12/31/13
Goldstone Solar System Radar	GSSR	10/01/88	09/30/20	12/31/30
European and Global VLBI Systems	EGS	10/01/88	09/30/20	12/31/30
Ulysses	ULYS	10/06/90	09/11/95	09/30/10
Geotail	GTL	07/24/92	07/24/95	10/01/09
Space Geodesy Programme	SGP	05/01/93	09/30/20	12/31/30
Wind	WIND	11/01/94	11/01/97	11/30/11
Ground Based Radio Astronomy	GBRA	10/01/95	09/30/20	12/31/30
SOHO	SOHO	12/02/95	05/02/98	12/31/11
Polar	POLR	02/22/96	08/23/97	04/30/08
Advanced Composition Explorer	ACE	08/25/97	02/01/01	08/31/11
Advanced Tracking and Observational Techniques (ATOT)	ATOT	10/01/97	09/30/20	12/31/30



Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)



– Ongoing / Approved Projects –

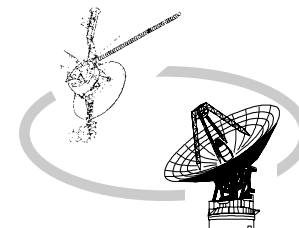
Project	Acronym	Launch or Start	EOPM	EOEM
Cassini	CAS	10/15/97	06/30/08	06/30/10
Chandra X-Ray Observatory	CHDR	07/23/99	09/30/14	09/30/19
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	09/30/11
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	09/30/11
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	09/30/11
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	09/30/11
Mars Odyssey 2001	M01O	04/07/01	08/24/04	12/31/10
Wilkinson Microwave Anisotropy Probe	WMAP	06/30/01	10/01/03	09/30/10
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/31/12
Hayabusa (MUSES - C)	MUSC	05/09/03	06/10/10	- - -
Mars Express Orbiter	MEX	06/02/03	02/11/06	05/01/09
Spirit (Mars Exploration Rover - A)	MER2	06/10/03	04/06/04	09/30/08
Opportunity (Mars Exploration Rover - B)	MER1	07/07/03	04/27/04	09/30/08
Spitzer Space Telescope (SIRTF)	STF	08/25/03	05/31/09	05/31/14
Rosetta	ROSE	02/26/04	12/31/15	- - -
Messenger	MSGR	08/03/04	03/19/12	- - -
Mars Reconnaissance Orbiter	MRO	08/12/05	12/31/10	12/31/15

03/20/2008

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DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)

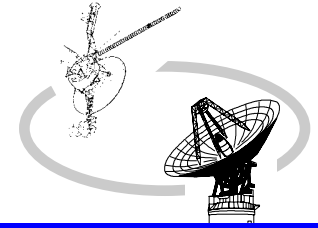


– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
Venus Express	VEX	11/09/05	09/24/07	05/01/09
New Horizons	NHPC	01/19/06	04/17/16	TBD
Stereo Ahead	STA	10/26/06	01/22/09	01/22/12
Stereo Behind	STB	10/26/06	01/22/09	01/22/12
EPOXI (Deep Impact)	DIF	07/03/07	12/14/10	---
NExT (Stardust)	SDU	07/03/07	02/27/11	---
Phoenix	PHX	08/04/07	08/31/08	10/30/08
Kaguya (SELENE)	SELE	09/14/07	11/21/08	TBD
Dawn	DAWN	09/27/07	07/04/15	TBD
Chandrayaan - 1	CH1	04/09/08	04/09/09	04/09/10
GOES-O	GO14	04/21/08	04/21/13	TBD
Lunar Reconnaissance Orbiter	LRO	10/28/08	11/30/09	TBD
Lunar Crater Observation and Sensing Satellite (LCROSS)	LCRO	10/28/08	02/05/09	---
Kepler	KEPL	02/16/09	09/16/12	TBD
Mars Science Laboratory 2009	MSL	09/15/09	03/04/12	TBD



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DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)



– Advanced / Planning Projects –

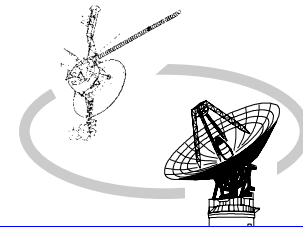
Project	Acronym	Launch or Start	EOPM	EOEM
Juno	JUNO	08/08/11	10/20/18	TBD
Gravity Recovery and Interior Laboratory-A (GRAIL-A)	TBD	09/09/11	05/27/12	TBD
Gravity Recovery and Interior Laboratory-B (GRAIL-B)	TBD	09/09/11	05/27/12	TBD
Discovery-13	TBD	01/01/13	TBD	TBD
James Webb Space Telescope	JWST	06/15/13	02/28/19	TBD
Mars Scout 2013 (TBS)	M13S	10/31/13	12/30/16	TBD
Magnetospheric Multiscale	MMS	10/01/14	12/31/17	TBD
Discovery-14	TBD	01/01/15	TBD	TBD
New Frontiers-3	TBD	01/01/15	TBD	TBD
Outer Planet-1	TBD	01/01/15	TBD	TBD
Beyond Einstein-1	TBD	01/01/16	TBD	TBD
Discovery-15	TBD	01/01/17	TBD	TBD



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DEEP SPACE MISSION SYSTEMS (DSMS)

Resource Allocation Planning Service (RAPS)



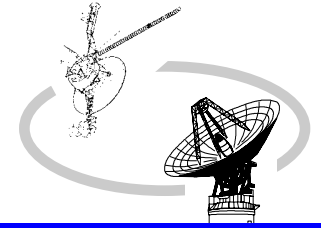
DSN Antenna Downtime Status and Forecast



<http://rapweb.jpl.nasa.gov/planning>

03/20/2008

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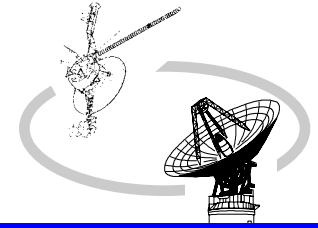
Resource Allocation Planning Service (RAPS)



Antenna Downtime Status and Forecast

The following downtimes are being studied for 2008 - 2010

- ☐ DSS-14 Grouting for week 25 in 2008 has been removed from the chart
 - ☐ Have requested from the complex to combine the downtime with week 31 and schedule 5-6 days
- ☐ DSS-55 downtime for Paint Repair beginning in June 2008 has been moved to September.
- ☐ DSS-34 downtime for DSS-34 Azimuth Track Repair in June Of 2008 for week 25 – 28.
 - ☐ Due to Cassini critical support, the downtime will start 1 day later.
- ☐ DSS-65 downtime for Life Extension Elevation for October, November of 2009 has been moved to weeks 31-41 in 2010.
- ☐ DSS-25 downtime for Ka U/L install for April 2010 re-scheduled for August, weeks 31-34.
- ☐ DSS-54 downtime for ACQ Aid Installation is scheduled for weeks 42 and 43 of 2008.
- ☐ CDSCC 26m antenna, DSS-46 will close as of August 1, 2009.
- ☐ DSS-43 downtime for Life Extension and Depot Level Maintenance starting October 3, 2008 has been moved to start January 5, 2009 and proposed to end April 12, 2009.
- ☐ DSS-63 downtime for Life Extension has been shortened to May 4, through August 2, 2009.
- ☐ As a result of the reduction of downtime for DSS-43 & DSS-63 in 2008 & 2009, it is requested to recover that time in 2010, local spring, summer or fall after DSS-14 RTS.
- ☐ DSS-15 downtime for Pentle Bearing has been scheduled for May 3, through June 27, 2010.
- ☐ DSS-34 downtime for Azimuth Track Replacement has been proposed for 2010, local summer.
- ☐ DSS-24 downtime for painting has been proposed for April – May of 2009. A study is being performed.



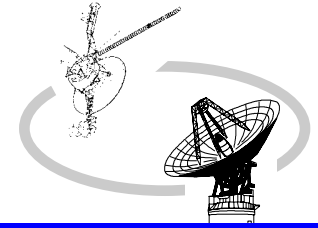
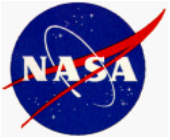
Resource Allocation Planning Service (RAPS)

Antenna Downtime Status and Forecast

Downtime request for 2008

The following proposals for 14 hour complex downtimes are requested by GDSCC.

- ❑ Corrective maintenance “Apollo Tie-Line CB 22 Electrical Maintenance” in April.
 - ❑ This is in the schedule for week 16 DOY 108/0755-2155 has been negotiated in the Mid-Range negotiation meetings.
- ❑ Corrective maintenance “G86/G81 Transfer Switch Electrical Maintenance” in May.
 - ❑ This was in the schedule for week 22 DOY 147/0830-2230. This downtime will be scheduled no earlier than week 36 and negotiated in the Mid-Range negotiation meetings.
- ❑ Preventative maintenance “G91 2400V Switchgear Electrical Maintenance” in June.
 - ❑ This is in the schedule for no earlier than week 38 and will be negotiated in the Mid-Range negotiation meetings.
- ❑ Preventative maintenance “Echo Tie-Line Electrical Maintenance” in September.
 - ❑ This is in the schedule for no earlier than week 40 and will be negotiated in the Mid-Range negotiation meetings.
- ❑ Preventative maintenance “Apollo Tie-Line Electrical Maintenance” in October.
 - ❑ This is in the schedule for no earlier than week 43 and will be negotiated in the Mid-Range negotiation meetings.
- ❑ Preventative maintenance “SPC-10 Electrical Maintenance” in November.
 - ❑ This is in the schedule for no earlier than week 45 and will be negotiated in the Mid-Range negotiation meetings.



Resource Allocation Planning Service (RAPS)



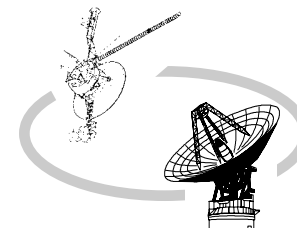
Antenna Downtime Status and Forecast

The following proposals for antenna downtimes are requested.

- ☐ MDSCC Annual Antenna Inspections including Annual Servo Testing at DSS-63, -65, -54 and -55 as follows:
 - ☐ Servo Testing for DSS-55 is scheduled for DOY 192/0600-1400 week 28
 - ☐ Servo Testing for DSS-63 is scheduled for DOY 193/0600-1400 week 28
 - ☐ Servo Testing for DSS-54 is scheduled for DOY 196/0600-1400 week 29
 - ☐ Servo Testing for DSS-65 is scheduled for DOY 199/0600-1400 week 29
 - ☐ Servo Testing for DSS-63 is scheduled for DOY 203/0600-1400 week 20 (will be deleted if week 28 is negotiated)
 - ☐ Antenna Inspection for DSS-63 is scheduled for DOY 154/0600-1400 week 23
 - ☐ Antenna Inspection for DSS-55 is scheduled for DOY 161/0600-1400 week 24
 - ☐ Antenna Inspection for DSS-54 is scheduled for DOY 162/0600-1400 week 24
 - ☐ Antenna Inspection for DSS-65 is scheduled for DOY 163/0600-1400 week 24
- ☐ HEF Transmitter Manifold Installation at DSS-15, -45 and -65 between July, 2008 and June 2009 not to be scheduled concurrently with DSS-15 being scheduled first.

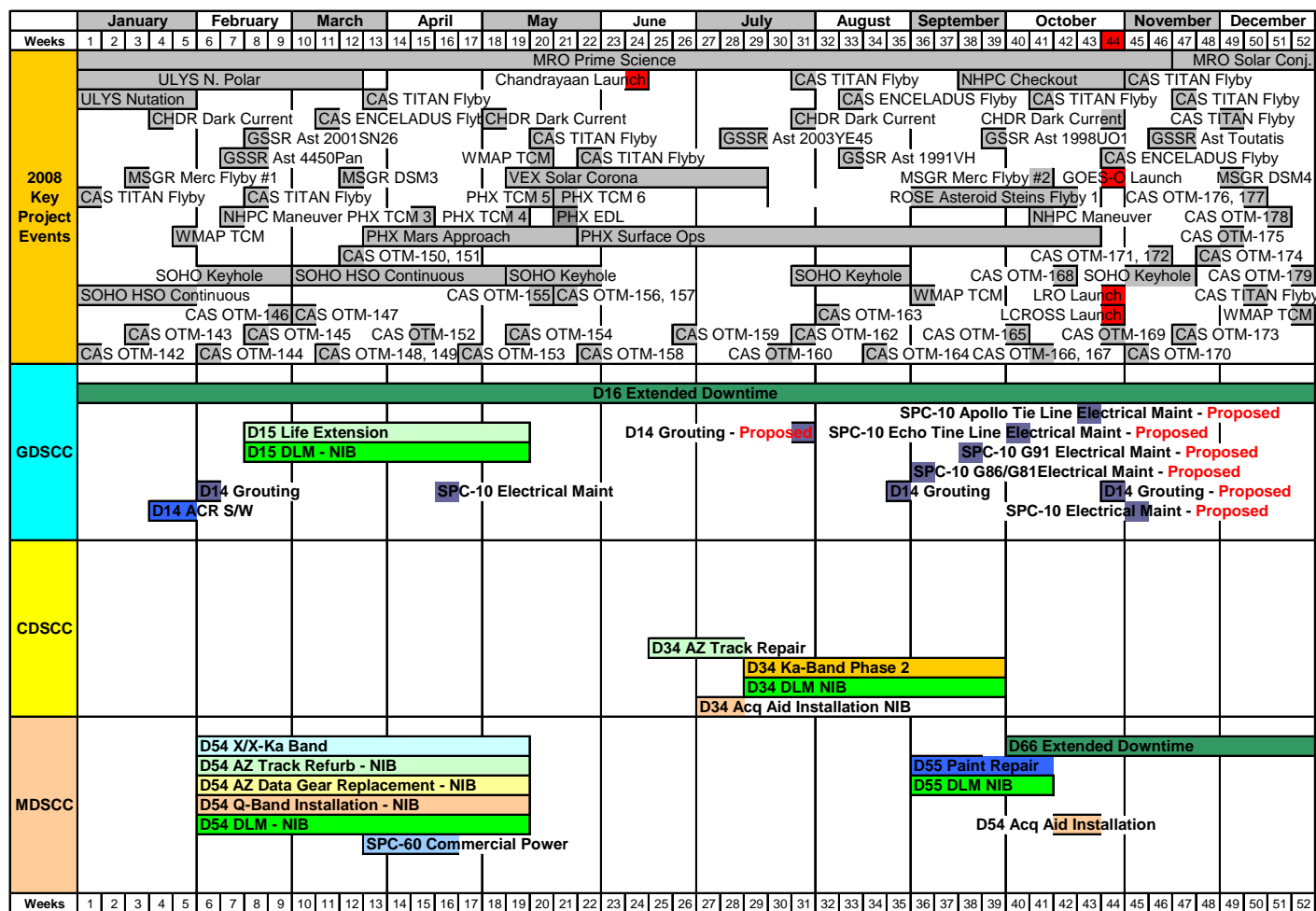


Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)

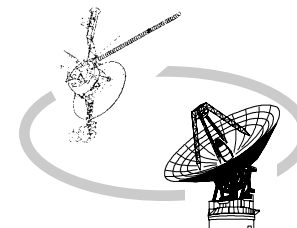
Antenna Downtime Status and Forecast 2008



Revised: March 20, 2008

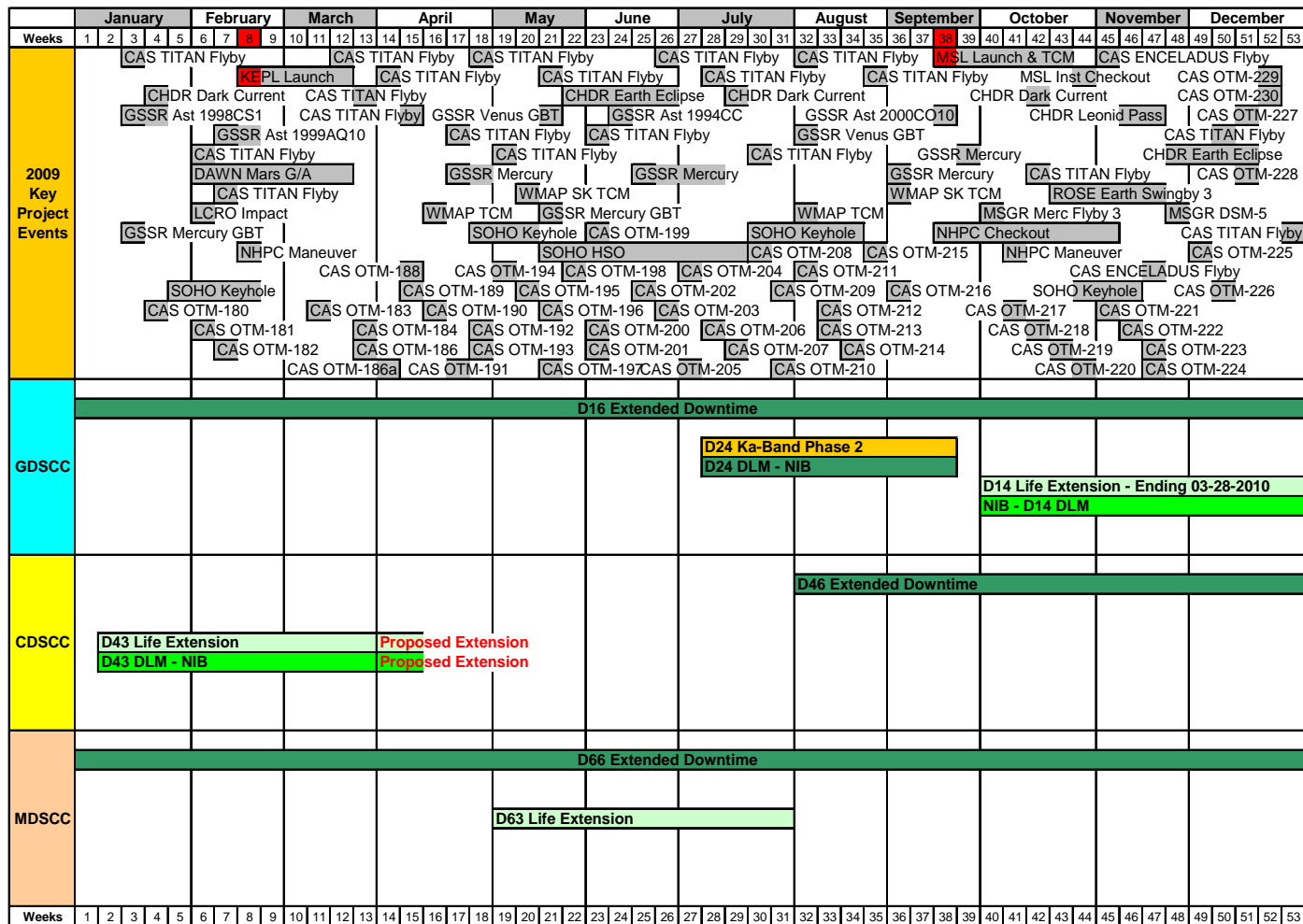


Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)

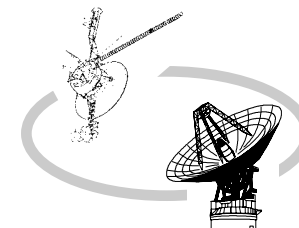
Antenna Downtime Status and Forecast 2009



Revised: March 20, 2008



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DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)



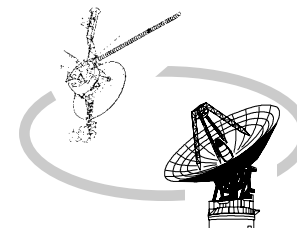
Antenna Downtime Status and Forecast 2010

	January				February				March				April				May				June				July				August				September				October				November				December																											
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																				
2010 Key Project Events	GSSR Mars												GSSR Mercury				GSSR Ast 1999 MN												GSSR Ast 1998U01				GSSR Ast 2003 UV11				GSSR Mercury																																			
									CHDR Dark Current								GSSR Mercury				CHDR Dark Current												GSSR Ast 2002 VE68																																							
	SOHO Keyhole								KEPL Qtrly. Roll				SOHO Keyhole								KEPL Qtrly. Roll								KEPL Qtrly. Roll																																											
	Wind TCM								Wind TCM												Wind TCM								Wind TCM																																											
													MSL TCM				MSL Approach				MSL Surface Ops				MRO MSL Support																																															
													MSL Inst Checkout				MSL TCM				MSL EDL								NHPC DDOR				NHPC TCM																																							
																	NHPC Pluto Rehearsal 1 & Checkout								NHPC TCM								ROSE DSM-																																							
																	ROSE Asteroid LutetiaFlyby																																																							
GDSCC	D16 Extended Downtime																																																																							
	D14 Life Extension - Start 10-03-2009												Proposed Extension																																																											
	NIB - D14 DLM												Proposed Extension																																				D25 Ka U/L												NIB - D25 DLM											
CDSCC	D46 Extended Downtime																																																																							
																																	D34 AZ Track Replacement - Proposed																																							
MDSCC	D66 Extended Downtime																																																																							
																																	D54 Ka-Band Phase 2 - Proposed																																							
																																	D65 Life Extension Elevation - Proposed																																							
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52																				

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Resource Allocation Planning Service (RAPS)

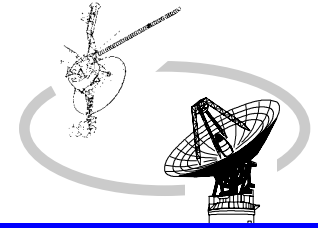


	January				February				March				April				May				June				July				August				September				October				November				December							
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
2011 Key Project Events	<div>CHDR Dark Current</div>								<div>CHDR Dark Current</div>																				<div>JUNO Launch</div>												<div>GSSR Asteroid 2000 YA</div>											
													<div>KEPL Qtrly. Roll</div>												<div>KEPL Qtrly. Roll</div>								<div>GRAIL Launch</div>				<div>KEPL Qtrly. Roll</div>								<div>KEPL Qtrly. Roll</div>							
	MRO Relay																																																			
	<div>ROSE DSM-2</div>								<div>ROSE DSH Entry</div>																																<div>NHPC DDOR</div>				<div>NHPC DDOR</div>							
<div>Wind TCM</div>																<div>Wind TCM</div>																<div>Wind TCM</div>												<div>NHPC Checkout</div>								
GDSCC	D16 Extended Downtime																																																			
CDSCC	D46 Extended Downtime																																																			
MDSCC	D66 Extended Downtime																																																			
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

Revised: March 20, 2008



Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



Resource Allocation Planning Service (RAPS)



DSN Resource Implementation Planning Matrix by Subnet

Complex	Station	Subnet	S-Band		X-Band		Ka-Band		Ka Phase 2
			Down	Up	Down	Up	Down	Up	
10	DSS-16	26M	✓	N/A	N/A	N/A	N/A	N/A	N/A
40	DSS-46	26M	✓	✓	N/A	N/A	N/A	N/A	N/A
60	DSS-66	26M	✓	✓	N/A	N/A	N/A	N/A	N/A
10	DSS-27	34HSB	✓	✓	N/A	N/A	N/A	N/A	N/A
10	DSS-24	34B1	✓	✓	✓	✓	N/A	N/A	09/21/09
40	DSS-34	34B1	✓	✓	✓	✓	✓	N/A	09/29/08
60	DSS-54	34B1	✓	✓	✓	✓	04/15/08	N/A	09/27/10
10	DSS-25	34B2	N/A	N/A	✓	✓	✓	08/01/10	N/A
10	DSS-26	34B2	N/A	N/A	✓	✓	✓	N/A	N/A
60	DSS-55	34B2	N/A	N/A	✓	✓	✓	N/A	N/A
10	DSS-15	34HEF	✓	N/A	✓	✓	N/A	N/A	N/A
40	DSS-45	34HEF	✓	TBD	✓	✓	N/A	N/A	N/A
60	DSS-65	34HEF	✓	TBD	✓	✓	N/A	N/A	N/A
10	DSS-14	70M	✓	✓	✓	✓	N/A	N/A	N/A
40	DSS-43	70M	✓	✓	✓	✓	N/A	N/A	N/A
60	DSS-63	70M	✓	✓	✓	✓	N/A	N/A	N/A
N/A = Capability Not Planned xx/xx/xx = Capability Date Recently Changed As of: 02/07/08 ✓✓✓ = Capability Recently Exists ✓ = Capability Exists									